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**report containing construction plans for
 a special 65 ton high-sea motorboat.**

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SPECIAL 65 PSN. HIGH-SPEED MOTORBOATTECHNICAL SPECIFICATION1. Dimensions and principal characteristics:

Length overall	abt.	29.0 m.
Length at floating line	"	27.0 "
Breadth at floating line	"	5.5 "
Construction depth	"	3.8 "
Mean draught, fully laden, from construction line	"	1.6
Corresponding displacement	"	55 Ton.
Maximum power of propelling motors abt.	"	1850
Speed at sea trials	"	28 knots
Cruising range	13 knots abt. 1200 miles 22 " " 1800 "	
Ordonnance		2 x 20 mm MG Oerlikon

2. General description:

The Motorboat to have a continuous deck with upper structure.

The stem to be rounded and raking forward, the stern to be square.

Boat shall be fitted with one signalling mast.

The Motorboat to have two propellers, each driven by means of a reduction gear by a Diesel Motor supercharged by an exhaust gas driven turbine.

The crew to be of 15 persons, namely 5 officers and 10 seamen. Below the upperdeck from forward to aft there shall be arranged the following compartments:

Fore-peak, chain locker, boatswain's locker

Eventually a munitions store

Crew's sanitary accommodation and pertaining gangway

Crew's quarters

Fuel oil tanks

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2.

Motor room

Four cabins for officers (1 Master and 3 Mates)

One officers' Lounge

One Pantry

One store-room

One officers' shower-bath

One officers' W.C. accommodation

One space for a drinking water tank and a fuel-oil tank

One place for the steering gear, containing also two lubricating oil tanks

In the deckhouse are arranged the following places:

Wheel-house (with eventually the accumulator-room below)

The wireless station

A cabin for the wireless-operator

A small store room

One W.C.

Four tarpaulins lockers

One galley including a provision store

A dining room

From inside of the deckhouse it will be possible to access under cover to all places below deck and to the upper bridge. Aft of the deckhouse and above the Officers' quarters shall extend a half-casing to increase the cubic capacity, the ventilation and the lighting of the above mentioned accommodations. Above the deckhouse, midships, there shall be an open bridge with a deflector.

The roof of the deckhouse shall have the engine room skylight fitted with hinged flap-doors.

On deck aft there shall be fitted two watertight hinged doors to give access to the fuel-oil tank-room and to the steering gear.

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On the front part of the deckhouse shall be fitted grid-openings to be regulated for the ventilation of the crew's quarters below.

Forward and after of the deckhouse there shall also be arranged small munition stores for the machine-guns.

3. Wooden hull

The hull to be of laminated wood on the transversal system. The hull will be of special wooden construction: keel and keelson, frames and beams will be of laminated oak; the shell will be of the double diagonal construction special pine planks with plastic sheet between; longitudinals will be of solid arch; the deck will be of aluminum alloy, corrosion proof, with antiskidding grooves; rivets and fittings will be of bronze; fresh water tanks will be of rustproof steel, fuel and oil tanks will be of M.S. steel.

The watertight bulkheads, numbering 8, shall be of aluminum alloy and designed to afford the proper strength with the least weight, where necessary they will have special doors of the submarine type.

The propeller brackets to be of the single type made of bronze.

The deckhouse, the half casing aft of same, the upper bridge, the skylight of the engine-room to be of light corrosion proof alloy.

4. Painting

The hull shall be given externally two coating of a suitable anti-rust and best quality paint. The bottom to be given cold-applied one anti-corrosive and one anti-fouling coating.

The dead-work, in addition to the two anti-rust coatings to be given also two coatings of oil-paint in a colour to be agreed.

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All inside structures to have two anti-rust paint coating, with exception of those underneath the engine-floor, the flats, and the bilges which shall be given two coats of special Triotoprene Standard Binding Varnish.

All parts that are to be left bare shall also be given two coatings of aluminum paint.

Suitable type of paints are to be used for light-alloy structures.

5. Outfitting:

For mooring and warping operations the motorboat shall be furnished and fitted with:

- One vertical drum hand-driven capstan with cable-holder
- Two bower-anchors
- 2 x 5 lengths stud-link chain cable
- Bits, fairleads, hawse pipes and hawser ports, two hawse pipes with tubes.

The steering of the motorboat to be operated by hand from the wheel-house.

The rudder to be of bronze plate and fitted inside the stern-frame.

The helm-port to be of bronze with stuffing-box and the rudder trunk to extend to the deck where an emergency tiller is designed to be fitted. On top of the deck-house shall be fitted a light-alloy and a post with the required supports for the radar, lights, search-light and electric horn.

The small mast to have a short yards to support the wireless and for signalling. It shall also carry the Morse signalling light.

Aft of the deck-house, on the half casing over the Officers' quarters shall be fitted apposite chocks for a fast wooden motorboat about 3½ m. long, to be used for ship-shore ser-

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vices. Said motorboat to be hoisted by special steel davits. A small wooden boat also to be placed on board. Steel doors to be fitted to enter the accommodations below deck as well as man-holes and metal ladders as per plan.

Forward, in front of the machine-gun, shall be fitted a steel breakwater.

A movable railing to be fitted along the ship's sides. Two flag-staffs, one forward and one aft, to be fitted complete with accessories and having on top electric riding lights.

For communications between the chart-room and the upper bridge and the engine-room shall be fitted a brass speaking tube with clackson call.

The Bosun's locker and the one located in the deck-house, shall have metal shelves to store the various items of outfit.

An elm-wood fender to be fitted along the whole length of the ship's sides.

6. Pipelines and Tanks.

In conformity with the plan there shall be fitted corresponding fuel tanks forward of the motor-room and inside of same. Fuel, lubricating oil and drinking water shall also be contained in the tanks fitted in the two places at the extreme end of the ship aft. Each tank to have air-pipes, filling pipes from deck, suction pipeline and sounding pipe. In the motor-room shall be placed a hand-pump to fill the service tanks. Fuel-pipes to be of iron, valves and accessories of bronze. Oil service to be operated by means of a hand-pump. Fresh water to be kept in tanks placed in the aft compartment as well as in a service tank on top of the deck-house. Fresh water to the galley wash basins in the fore and aft

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quarters and to the shower baths to be supplied by pressure tanks through suitable pipelines.

The bilge-exhaust to be made by means of an apposite pipeline fitted with the required suction ends. In the motor-room shall be placed a hand-operated bilge-pump in addition to the electric bilge-pumps. The outflow from the basins, showers-bath and the galley-sink shall be collected into a tank placed in the bilge. This tank shall be emptied by means of electric pump.

To empty the bilges of all places portable hand-pumps shall be supplied besides the main electric pump.

The fuel and lubricating oil contained on board shall allow a cruising range 4200 sea miles.

7. Furnishing of Quarters:

Walls and ceilings in the forward and aft accommodations to be sheathed with oil-painted marinite. All exposed parts shall, in addition, be suitably insulated against heat.

The floors in the quarters to consist of a ceiling of spruce covered with linoleum and having movable panels to allow inspection of the bilges underneath.

At the ship's sides shall be fitted fixed bulk's eyes as shown on drawing and furnished with hinged armour and curtains.

Aft are to be fitted four single-cabins, one for the Master and the other three for the officers, a lounge, a pantry, a store-room, a shower-bath and a W.C. accommodation.

The four single-cabins to have steel furniture. The lounge to have a polished hard-wood table, a divan extended along three partitions, two side-wards etc.

The dining-room to have a polished hard-wood table, a divan, four armchairs, two glass-cases and a serving table.

The crew's quarters to have two-tier metal berths and painted maccinite furniture and shall contain 8 beds, 6 lockers, each for one or two persons, to keep clothing, 1 collapsible table and two collapsible benches.

3. The deck-house:

The deck-house to contain the wheel-house, the chart-room, the wireless station, a small locker, the lockers for tar-pauline, the cabin of the wireless operator, a W.C. accommodation, the galley including a provision store. Inside of the deck-house it will be possible to circulate to all places below completely sheltered against the weather.

The partitions and ceilings of all places shall be insulated with suitable Lubljana material. The wheel-house, chart room, wireless station and the cabin of the wireless operator shall also be lined inside with plastics on the partitions and ceilings.

The floor of all the above quarters to be left in bare excepting the cabin of the wireless operator to be alike those in the other officers' cabins.

The wheel-house to have rectangular port-lights of light alloy, a part whereof to be fixed and the other to be opened. The remaining places inside of the deck-house to have round port-lights of light alloy of 300 mm diameter as shown on plan.

The wheel-house, chart-room and wireless station to have steel furniture and be correspondingly furnished. It will be possible to communicate from the wireless-station and from the chart-room with the wheel-house through two windows of the respective partitions.

4. Accessory places:

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The galley to be furnished in conformity with the service requirements. The officers' and crew's sanitary accommodations to have steel partitions, floors and ceilings.

Officers to have two distinct sanitary accommodations; one shower-bath and one T.C. closet. The officer's shower to have a collapsible seat, a locker and a wooden grating. The officers' T.C. to have a pump operated type closet, a basin with all accessories and a locker.

The crew also to have two separate sanitary places; one shower-bath and one T.C. accommodation. The shower-bath to have a basin complete with accessories and a collapsible wooden seat. The T.C. place also to have a second complete wash basin.

The officers' and crew's sanitary accommodations to have fixed bull's eyes of 250 mm diameter furnished with hinged dead-lights, as per plan.

10. Heating Plant:

The quarters and deck-houses accommodations (excluding the storage-rooms) shall be fitted up with electric heating; a central heating plant thermosyphon circulation. The combustion gas exhaust shall take place through a telescopic tunnel. The heating elements to be of quartz type.

11. Ventilation:

Ventilation of the motor-room to be by means of an electric fan of adequate capacity. Air intakes for the 950 delivery ducts to be placed on the roof of the deck-house. A suitable electric fan to be fitted to ventilate the quarters when the boat is not in action.

All places below deck forward of the motor-room to have forced ventilation. An electric fan to be fitted for the

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delivery to serve, through suitable ducts, every single place.

Independent ducts shall be fitted to extract the air from every single place excluding the shower-bath and W.C., where suction is to operate through the adjacent closet.

The remaining places to have natural ventilation.

The accumulator storage shall have natural delivery and mechanical extraction by means of an electric exhaust fan, in order to assure the gas exhaust also when the ship is not in motion.

12. Electric installation:

Electric power for the light and power to be supplied from a generating set fitted in the motor-room to supply the following places:

- a) a lighting plant consisting of an adequate number of lighting points and plugs distributed on various main circuits furnished with a switchboard with circuit-breakers and fuses,
- b) a navigation lights installation,
- c) an electric horn sounded by push-button,
- d) a search-light, for slow lamp, operated from the wheel-house,
- e) the radar and wireless installation,
- f) the electric fans for the quarters and various places,
- g) the electric fan for the motor-room,
- h) the electric air-extractor for the accumulator battery storage,
- i) a radio-telephone installation.

The electric starting of the propelling motors to be secured by means of the storage battery, which shall be charged by the dynamos fitted for this purpose on the pro-

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pelling motors, and eventually by the generating sets. To feed the various electric services on the ship a start-stop battery of suitable size will be fitted, this battery to be connected in to the generating set so as to assure tension stability in feeding the special installations, wireless and radar, and continuity of service also in case of damage to the generating set.

The two groups of batteries shall be placed in a compartment in the engine-room, duly closed in a special container and ventilated as said before.

A special connection is foreseen from shore to feed the electric circuits.

On the upper bridge shall be fitted a Radiogoniometer.

13. Inventory:

The following outfitting articles to be furnished:

- 1 - 12 cm. circumference hump rope 40 m. long
- 2 - 10 cm. circumference hump rope coils each 20 m. long
- 1 hedge-anchor abt. 50 kg. and pertaining chains
- 2 boat-hooks
- 1 emergency tiller for the rudder
- 1 liquid compass with azimuth staves
- 1 national flag
- 1 set of flag signals
- 2 wall clocks, one for the wheel-house and one for the motor-room
- 1 bronze bell
- 1 megaphone
- 6 cork life-buoys and 10 life belts
- 2 life-rafts to carry 8 persons each
- 4 cork-fenders
- 2 CO₂ 5 litres capacity fire extinguishers

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- 4 - 40 litres foam extinguishers for the motor-boat
 - 4 - 6 litres foam extinguishers
 - 1 hand-pump for fire-fighting and washing
 - 1 sun-extinguisher for the upper bridge
 - 2 bronze-circled wooden buckets
 - 1 boating scoop
 - 1 emergency portable accumulator lamp
 - 2 kerosene lamps
 - 2 candle lamps
 - 2 metric sounding-rods for fuel and water tanks
 - 1 oiler-trough for fuel-oil
 - 3 under-way lights, white, red and green
 - 1 riding light
 - 1 storm light
 - 1 search light
 - 1 electric or compressed-air sounding horn
 - burlap covers: one for the motorboat, one for the engine-room skylight, 3 for the companionways, 2 for the machine zone, one for the searchlight.
 - All instruments on the exposed upper bridge also to be protected by burlap heads.

14. Motors:

For propelling the ship there shall be installed two "MERCEDES-BENZ" M Type 320 B 6 Diesel Cycle four-stroke 12,0 cylinders V-60 meters of 172 mm diameter and 205 mm stroke, supercharged by turbine blowers driven by exhaust gases, with fresh water cooling and electric starting, each motor having a continuous power of 510 shaft horse power at 1410 revolutions per minute.

Each motor shall be coupled to the steel shaft lines, complete with bearings and bronze propeller, by means of a hydraulic

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driven reversing and reduction gear, each motor to drive directly the fuel injection pumps, the cooling pump for the fresh water and sea water circulation and the lubricating oil pump. The starting of each motor to be by means of a small electric motor. One dynamo to be coupled on to the fresh water pump shaft thus securing a continuous charging of the starting batteries already mentioned in describing the electric installations.

The propelling motors to have all the necessary accessories for their working, suction and exhaust trunks, silencers, fuel-oil and lubricating oil tanks etc.

The drive of the motors also to be governed from the wheelhouse and for this purpose there shall be fitted in each the reversion and fuel levers of each motor, a tachometer and the necessary instruments of control.

The accommodation to have a light sitting plate floor and to contain a work bench with vice and to be correspondingly unfurnished.

The normal spare parts should be furnished for the propelling motors and accessories as well as a set of tools and equipment for a normal maintenance.

There shall also be installed on board a motor-supercharger.

Electric driven bilge, ballast and fire pump will be fitted as required.

15. Ammunition

Two copy make equipments are designed for mounting guns of 20 mm bore, one forward and one aft. The total weight at the disposal of the gunnery ploughing the order for those two weapons to be of 2000 lbs. about.

The weapons in question, prior examination and consent of the party ordering, may be the Italian ORBISON NAVAL GUN & SIA/ISG.

ARMAMENT

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A munition store shall be designed forward below deck, to be furnished with metal shelving. There shall furthermore be two small munition stores, one forward and one aft. The total weight of the munitions at the disposal of the party ordering, to be of 1600 Kgs.

16. Exclusions:

From the supply are to be excluded:
all consumption materials excepting the fuel and lubricant required for the sea trials.

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